

Notice of Allowability

Application No.

10/630,603

Examiner

Srirama Channavajjala

Applicant(s)

MICKA ET AL.

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2166

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/24/07.
2. ☐ The allowed claim(s) is/are 1,3,6,11,16,20,25 [re-numbered as: 1-7].
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 2/20/07.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Response to RCE

1. Claims 1,3,6,11,16,20,25 are allowed.
2. Claims 1,11,16,20,23,25 have been amended [1/24/2007].
3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed on 01/24/2007 in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission of preliminary amendment filed on 01/24/2007 has been entered.
4. Claims 1-4,6,11-12,14,16,20-21,23,25 have been amended [6/12/2006].
5. Claims 5,7-10,13,15,17-19,22,24,26-28 have been cancelled [6/12/2006].

Drawings

6. Examiner reviewed and accepted "replacement sheet" fig 2-3 filed on 1/24/2007.
7. The Drawings filed on 7/30/2003 are acceptable for examination purpose

Information Disclosure Statement

8. The information disclosure statement filed on 7/30/2003 is in compliance with the provisions of 37 CFR 1.97, and has been considered and a copy was enclosed with previous Office Action.

Claim Rejections - 35 USC § 101

9. In view of applicant's amendment to claim 11,20, the rejection under 35 USC 101 as set forth in the previous office action is hereby withdrawn.

Interview:

10. Applicant's Attorney Dale F. Regelman, Regd. No. 45,625 is thanked for the telephone interview on 20 February 2007. During that telephone Dale F. Regelman granted authorization to amend claims 1,3,6,11,16,20,25 and cancel claims 2,4,12,14,21,23

EXAMINER'S AMENDMENT

11. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Applicant's Attorney Dale F. Regelman, Regd. No. 45,625, on 20 February 2007.

The application has been amended as follows:

1. **(currently amended)** A method to provide information to multiple data storage devices, comprising the steps of:

providing a computer comprising memory;

providing a first data storage device comprising a first information storage medium and a second data storage device comprising a second information storage medium, wherein said first data storage device is capable of communicating with said second data storage device;

generating ~~first information~~ one or more computer files by said computer

saving said ~~first information~~ one or more computer files in said memory;

providing a least recently used protocol, wherein one or more of the least recently used files are written to one or more data storage devices;

determining using said least recently used protocol if said ~~first information~~ one or more computer files should be written to one or more information storage media;

operative if said ~~first information~~ one or more computer files should be written to one or more information storage media:

providing said ~~first information~~ one or more computer files to said first data storage device and synchronously providing said first information to said second data storage device;

writing said one or more computer files to said first information storage medium;

writing said one or more computer files to said second information storage medium;

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providing a first write complete signal indicating that said one or more compute files have been written to said first information storage medium and to said second information storage medium;

operative if said one or more computer files must not be synchronously written to multiple information storage media;

writing said one or more computer files to said first information storage medium;

determining if said one or more computer files has been written to said first information storage medium;

operative if said first information has been written to said first information storage medium, generating a second write complete signal indicating that said one or more compute files have been written to said first information storage medium.

2. Canceled.

3. **(currently amended)** The method of claim 2 1, wherein said ~~first information~~ one or more computer files are ~~is provided to said first data storage and retrieval system device~~ by a host computer, further comprising the step of providing said second write complete signal to said host computer.

4. Canceled.

5. Canceled.

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6. **(currently amended)** The method of claim 4 1, wherein said one or more computer files must not be synchronously written to multiple information storage media, further comprising the steps of:

scheduling the transmission of said ~~first information~~ one or more computer files to said second data storage ~~and retrieval system~~ device;

providing said ~~first information~~ one or more computer files to said second data information storage ~~and retrieval system~~ device;

writing said ~~first information~~ one or more computer files to said second ~~data~~ information storage ~~and retrieval system~~ medium.

7. Canceled.

8. Canceled.

9. Canceled.

10. Canceled.

11. **(currently amended)** An article of manufacture comprising a processor, a memory, a least recently used protocol wherein one or more of the least recently used files are written to one or more data storage devices, and computer readable medium having computer readable program code disposed therein to provide information from a first data storage device comprising a first information storage medium to a second data storage device comprising a second information storage medium, the computer readable program code comprising a series of computer readable program instructions which cause said processor to carry out a process comprising the steps of:

generating ~~first information~~ one or more computer files;

saving said ~~first information~~ one or more computer files in said memory;

determining using said least recently used protocol if said ~~first information~~ one or more computer files should be written to one or more information storage media;

operative if said ~~first information~~ one or more computer files should be written to one or more information storage media:

providing said ~~first information~~ one or more computer files to said first data storage device and synchronously providing said ~~first information~~ one or more computer files to said second data storage device;

writing said one or more computer files to said first information storage medium;

writing said one or more computer files to said second information storage medium;

providing a first write complete signal indicating that said one or more computer files have been written to said first information storage medium and to said second information storage medium;

operative if said one or more computer files must not be synchronously written to multiple information storage media:

writing said one or more computer files to said first information storage medium;

determining if said one or more computer files has been written to said first information storage medium;

operative if said first information has been written to said first information storage medium, generating a second write complete signal indicating that said one or more

compute files have been written to said first information storage medium.

12. Canceled.

13. Canceled.

14. Canceled.

15. Canceled.

16. (**currently amended**) The article of manufacture of claim 44 11, said computer readable program code further comprising a series of computer readable program instructions which, if said one or more computer files must not be synchronously written to multiple information storage media, cause said processor to carry out a process comprising the steps of:

scheduling the transmission of said ~~first information~~ one or more computer files to said second data storage ~~and retrieval system device~~;

providing said ~~first information~~ one or more computer files to said second data storage ~~and retrieval system device~~;

writing said ~~first information~~ one or more computer files to said second ~~data information~~ storage ~~and retrieval system medium~~.

17. Canceled.

18. Canceled.

19. Canceled.

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20. **(currently amended)** A computer program product usable with a programmable computer processor, said product comprising a computer readable medium having computer readable program code embodied therein to provide information from a first data storage device comprising a first information storage medium to a second data storage device comprising a second information storage medium, said computer readable code comprising:

computer readable program code which causes said programmable computer processor to save ~~first information~~ one or more computer files in a memory;

computer readable program code which causes said programmable computer processor to determine using a least recently used protocol, wherein one or more of the least recently used files are written to one or more data storage devices, if said ~~first information~~ one or more computer files should be written to one or more information storage media;

computer readable program code which, if said ~~first information~~ one or more computer files should be written to one or more information storage media, causes said programmable computer processor to:

provide said first information to said first data storage device and synchronously provide said first information to said second data storage device;

write said one or more computer files to said first information storage medium;

write said one or more computer files to said second information storage medium;

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provide a first write complete signal indicating that said one or more compute files have been written to said first information storage medium and to said second information storage medium;

computer readable program code which, if said one or more computer files must not be synchronously written to one or more information storage media causes said programmable computer processor to:

write said one or more computer files to said first information storage medium;

determine if said one or more computer files has been written to said first information storage medium;

operative if said first information has been written to said first information storage medium, generate a second write complete signal indicating that said one or more compute files have been written to said first information storage medium.

21. Canceled.

22. Canceled.

23. Canceled.

24. Canceled.

25. **(currently amended)** The computer program product of claim ~~24~~20, further comprising:

computer readable program code which, if said one or more computer files must not be synchronously written to multiple information storage media, causes said

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programmable computer processor to schedule the transmission of said ~~first information~~
one or more computer files to said second data storage ~~and retrieval system~~ device.

26. Canceled.

27. Canceled.

28. Canceled.

In the Title

Pursuant to MPEP 606.01 the Title is changed to read

***--METHOD AND APPARATUS FOR DETERMINING USING LEAST
RECENTLY USED PROTOCOL IF ONE OR MORE COMPUTER FILES SHOULD BE
WRITTEN TO ONE OR MORE INFORMATION STORAGE MEDIA AND
SYNCHRONOUSLY PROVIDING ONE OR MORE COMPUTER FILES BETWEEN
FIRST AND STORAGE DEVICES —***

Reasons for allowance

The following is an examiner's statement of reasons for allowance:

The present invention is directed to a method providing first information and second information to the first data storage device at a first time, the second information comprises a write command. The method determines if the second information comprises a synchronous copy attribute. If the second information comprises a synchronous copy attribute, then the method synchronously provides the first information to the second data storage device.

The closest prior art Saake et al. US Pub.No. 2004/0143563 is directed to object management system comprises a storage device particularly, a first computer system configured to store a first object, and a copy of the first object on the storage device, and a second computer system. The first computer system is configured to create a first data object including information about the stored copy of the first object, and the second computer system is configured to read the information about the stored copy of the first object from the first data object, and retrieve the stored copy of the first object from the storage device [page 1, col 1, 0008, fig 1]

The closest prior art Yamagami, US Patent No. 7,152,078 is directed to computer program products for backup and restoring storage volumes in a storage area network, more specifically, techniques for performing system backup and restoring. The

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method is especially useful in an environment in which a first storage subsystem and second storage subsystem are connected to each other via a path. The first storage subsystem is connected to a first host and the second storage subsystem is connected to a second host. The method comprises performing a backup procedure and a restore procedure. The backup procedure comprises providing a first logical volume to the first storage subsystem, a second logical volume and a third logical volume in the second storage subsystem. The second logical volume can be a copied logical volume of the first logical volume. The second and third logical volumes can be in sync state. The method can be initiated responsive to a command from the first storage subsystem or the like [col 2, line 1-21].

It is however, noted that prior art of record Saake et al. US Pub.No. 2004/0143563, Yamagami, US Patent No. 7,152,078 either along or in combination fails to anticipate or render obvious, the recited feature of *"operative if said one or more computer files must not be synchronously written to multiple information storage media: writing said one or more computer files to said first information storage medium; determining if said one or more computer files has been written to said first information storage medium; operative if said first information has been written to said first information storage medium, generating a second write complete signal indicating that said one or more compute files have been written to said first information storage medium"* in claims 1,11,20.


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These features, together with the other limitations of the independent claims are novel and non-obvious over the prior art of record. The dependent claims 3,6,16,25 being definite, enabled by the specification, and further limiting to the independent claim, are also allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alam, Hosain, T, can be reached on (571) 272-3978. The fax phone numbers for the organization where the application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)

sc
Patent Examiner.
February 22, 2007.


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PRIMARY EXAMINER